

### Summary of NPDES Permit Rationale

Name Georgia Power Company - Plant Scherer NPDES No. GA 0035564  
Location Monroe County Major Discharge \_\_\_\_\_  
Minor Discharge X Date 12/29/86 Prepared by T. E. Hopkins  
Draft permit is first issuance \_\_\_\_\_ reissuance with no modifications  
from previous permit \_\_\_\_\_ modification of existing permit X.  
Discharge is industrial X municipal \_\_\_\_\_ privately owned (domestic  
wastewater only) \_\_\_\_\_. If industrial, point source category is 423  
Steam Electric Power Generating subcategory is  
\_\_\_\_\_ N/A \_\_\_\_\_ production level is  
3,272 megawatts, SIC code is 4911.

Facility located on stream segment that is and the basis for derivation of  
limitation is:

\_\_\_\_\_ Stream water quality limited  
\_\_\_\_\_ Based on water quality model  
\_\_\_\_\_ Based on instream calculation at 7 day, 10 year low flow  
X Stream effluent limited  
\_\_\_\_\_ X Based on promulgated guidelines  
\_\_\_\_\_ Based on plant's demonstrated performance  
\_\_\_\_\_ Based on demonstrated technology

Discussion:

See Following Pages:

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GEORGIA POWER - PLANT SCHERER  
SUMMARY OF NPDES PERMIT RATIONALE  
DISCUSSION  
GA 0035564

This permit is prepared in response to USEPA Region IV's January 15, 1986 letter and a revised partial Form 2C submitted by Georgia Power on May 5, 1986. Units 3 and 4 are included as existing sources. See also EPA's 7/29/86 and 11/4/86 letters and EPD's 9/9/86 and 12/29/86 responses.

01 I Pond Final Discharge and 01D I Pond Bottom Drain to Berry Creek: A daily max. TSS of 90 mg/l should be adequate to protect State waters and begin a track record at this outfall. A pH of 6.0-9.0 is required by 40 CFR 423. TRC monitoring is added to determine chlorine discharges during continuous service water chlorination for asiatic clam control.

01A Cooling Tower Blowdown for Units 1, 2, 3, 4: These are 40 CFR 423 regulated waste streams except under certain conditions as discussed. All requirements are derived directly from the Federal regulations. The "floating solids/visible foam" statement is deleted from this and other internal waste stream permit pages. Blowdown losses are made up from the service water system which is to be continuously chlorinated to control asiatic clams. See Part III. B. 4., Special Requirements. During clam control, chlorine will be discharged simultaneously from more than one unit and for more than 2 hours/day/unit. Allowable chlorine discharge concentration limits under these conditions is beyond the scope of the regulations. It is our best professional judgement (BPJ) that these chlorine (FAC) concentrations will not significantly exceed 0.2 mg/l average, 0.5 mg/l maximum at 01A. Further, the 01A waste stream passes through I-Pond (outfall 01) where chlorine dissipation will occur prior to entering the receiving stream. Therefore, specific numerical limits are not being established at this time. However, the chlorine minimization requirements of Part III. B. 4. and the permit modification provision of Part II. B. 8. (which is to be implemented as indicated in the 03 discussion below) will adequately protect Berry Creek. Finally, priority pollutant certification will be required every two years in the flow characterization study.

01B Ash Transport Water (includes 02H, Wastewater Basin Low Volume Wastes): On May 5, 1986, Georgia Power submitted information which enables an ash pond volume test calculation per the August 22, 1985 USEPA Guidance Memo. The calculation (attached) indicates that dilution does not occur and the 40 CFR 423 limitations can be applied without reduction.

02J Settling Pond Emergency Overflow to Lake Juliette: This may be considered a discharge of ash transport water to a water of the U.S. The applicable limits for TSS, Oil and Grease, and pH are taken from 40 CFR 423.



02K Wastewater Basin Emergency Overflow: This may be considered a discharge of low volume wastewater to Lake Juliette, a water of the U.S. Therefore, TSS, O&G, and pH limits are taken from 40 CFR 423. This basin serves Units 1 and 2.

02L Wastewater Basin Emergency Overflow to Lake Juliette (Low Volume Wastes): This basin serves Units 3 and 4. Permit requirements are identical to 02K above.

03 Service Water Final Discharge to Lake Juliette: This discharge is analogous to once-through, non-contact cooling water. The pollutants which are to be regulated are temperature and chlorine. The discharge consists of miscellaneous cooling water flows and pump bleedoff, none of which pass through the main condensers. This waste stream is not covered in 40 CFR 423, so effluent limits are based on BPJ. Georgia Power expects no significant rise in temperature and will verify by measurements in the lake. This assumption is consistent with our experience with other once-through, non-contact, non-condenser cooling waters. Therefore, periodic monitoring without limits is adequate. After sufficient monitoring data are obtained, we may add limits if W.Q. standards are being violated. Chlorine from control of normal biofouling and asiatic clams will be discharged at 03. Therefore, TRC monitoring will be imposed. This monitoring will document existing control of chlorination and discourage over-use. Reductions in TRC discharge will be required if EPD documents TRC toxicity in the receiving water. This approach is consistent with our developing statewide strategy for controlling and abating TRC toxicity.

04 and 05 Unit 1 and Unit 2 Cooling Tower Basin Overflows to Lake Juliette, including Basin Cleaning Wastes: Cooling tower basin overflows are analogous to cooling tower blowdowns, so limits for FAC, TRC, chrome and zinc are imposed from 40 CFR 423. Also, see above discussion in 01A regarding chlorine discharges during asiatic clam control. Similar requirements apply to 04, 05, 06, and 07. Basin cleaning wastes are low volume wastes, so the 423 limits for TSS and O&G are used. These waste streams discharge directly to a water of the U.S., requiring pH limitations per Part 423. A compliance inspection verified that stop log leakage is insignificant. No monitoring is required and periodic review in the bi-annual flow charac. study is adequate to control leakage. Priority pollutant certification is allowed as in the provisions of 01A Cooling Tower Blowdown.

06 and 07 Units 3 and 4 Cooling Tower Basin Overflows/Basin Cleaning Wastes to Detention Pond (I Pond): Limitations for these waste streams are written as 04 and 05, except that "I Pond" is not a water of the U.S. Therefore, pH monitoring is not required. The pH of the final discharge is limited at 01/01D, the "I Pond" outfalls.

Special Requirements See Part III. B

1. PCB's: The statement from 423 is repeated.
2. & 3. Metal Cleaning Wastes: The BPT/BAT provisions are incorporated from 423. These wastes are not discharged to a U.S. water. Therefore, pH is not limited except at the final plant discharge.
4. FAC and TRC time and simultaneous discharge provisions: Part 413 is cited. The company has demonstrated the need to simultaneously discharge chlorine for more than 2 hours/day/unit during service water chlorination for clam control. The BAT numerical limitations for FAC in cooling tower blowdown (01A) do not apply under these circumstances. However, increased monitoring and chlorine minimization will protect water quality, as contemplated for verification by EPD toxics monitoring. The company will study and implement the most feasible chlorine minimization early in the life of the permit. Further, the company must develop a new format for reporting time of FAC and TRC discharges.
5. The FAC average and instantaneous maximum are specified here per 40 CFR 423.
6. Priority pollutants shall be certified absent in all cooling tower blowdowns/overflows every 2 years.
7. Combined discharges: Part 423 is cited re mass-based limits.
8. Modifications: Expands Part II.B.4. to specify that the company may request changes to limits.
9. Flow characterization study: Studies are to be done every two years.
10. Sewage treatment plants: All STP's (02A, 02B, 02C, 02D) are to be operated properly. These plants do not discharge directly to a U.S. water.
11. Water treatment chemicals other than chlorine: These are to be inventoried every two years.
12. Use of alternate report forms may be allowed.
13. Periodic reports to be included with flow charac. studies:
  - a) Stop log leakage
  - b) Metal cleaning
  - c) Flows
  - d) Water treatment chemicals
  - e) C.T. blowdown certification

6/19/86 TEH

Plant Scherer  
Ash Transport Water Effluent Limitations  
Outfall 01B

Available Information

02H Raw Volume Wastes	8200 gpm =	11.81 MGD
02 Ash Transport Water	36,090 gpm (net) =	51.97
02E Coal Pile Runoff	2,500 gpm =	3.6
02C, D STP's	34 gpm $\approx$	0
		<hr/> 67.38 MGD

Ash Pond Area = Total Runoff Area = 490 acres

10 year 24-hour storm (10Y24H) = 5.8 inches  
Annual rainfall = 44.77 inches

Calculations

Runoff from 10Y24H storm at a runoff coefficient of 1.0  

$$= (490 \text{ acres})(5.8 \text{ inches})(1 \text{ ft}/12 \text{ in})(43560 \text{ ft}^2/\text{acre})(7.48 \text{ gal}/\text{ft}^3)$$

$$= 77.2 \text{ MG}$$

Total ash pond volume for use of alternate approach  

$$= 144.6 \text{ MG}$$

$$= 444 \text{ A-FT.}$$



6/18/86 TEH

Case I

Ash pond water surface area (acres)	=	490
Average water depth when new	=	32.65 ft.
Subtract 2 units $\times$ 160 A-Ft/year $\times$ 4 years $\div$ 490 acres	=	- 2.61 ft.
Average water depth available	=	30.0 ft.
Available volume	=	14,700 A-Ft

Since the pond volume exceeds the necessary storage volume of 444 A-Ft. required to use the alternate approach, only dry weather flows need to be used in calculating effluent limitations.

Sources	Flow (MGD)	Daily Average Limitations (mg/L)		Daily Maximum Limitations (mg/L)	
		TSS	O <sub>2</sub> G	TSS	O <sub>2</sub> G
Low Volume Wastes	11.81	30	15	100	20
Ash Transport Water	51.97	30	15	100	20
Flow Weighted Conc.	(63.78)	30	15	100	20
<u>Effluent Limitations for OIB</u>		<u>30</u>	<u>15</u>	<u>100</u>	<u>20</u>

Tom Hopkins  
P 3 CTBD

TRC

Exist Permit  $\rightarrow$  2 Units to 4

Corbícula control is new

11/82 Guideline BAT

Can we go beyond 11/85 (since  
corbícula control is new) to  
waive limits in permit for 1 yr  $\pm$   
Vs Admin Order ??

After one year period there  
are to be

12/29/86

1. Our 11/4/86 Letter
2. Implemented AIT # 1
3. Gra Pwr will sequentially dischar tower/conductor claim rather than simultaneous -
4. Gra Pwr to revise discussion of Cl<sub>2</sub> practices
5. Request that
  - (a) We review draft w/ confines of specific objection.
  7. (b) No reason to raise additional
  - (c) AIT #1 allows adherence w/ regulations w/o arbitrary inst of doctor.
  - (d) Toxicity reduction can be implemented gradually based on demo of need
6. Outfall 03, Part II B.8 will allow adequate control (tox.) & nothing needs additionally
7. No need for further & v

Letter to Woodall 12/29

1. "If Cl<sub>2</sub> discharges are minimized"
2. "Doctor will not be considered until W/Q impacts"



Charles Kaplan

To: B.BARRETT (EPA9440)  
From: ITD/OWRS (EPA4361) Posted: Tue 18-Nov-86 15:53 EST Sys 63 (47)  
Subject: Message for Charles Kaplan

\*\*\* DRAFT \*\*\* DRAFT \*\*\* DRAFT \*\*\*

SUBJECT: Georgia Power, Scherer Plant  
Chlorine Limitations  
Your Memorandum of November 5, 1986

FROM: Dennis Ruddy (WH-552)  
Project Manager, Steam Electric  
Industrial Technology Division

TO: Charles H. Kaplan, P.E. (4WM-FP)  
National Expert, Steam Electric  
Region IV

I concur with all of your findings regarding chlorine limitations for tower/condenser cooling waters based on review of Georgia EPD's draft permit of September 16, 1986. Your basis for objections to the draft permit in your letter of November 4, 1986 to EPD are consistent with the requirements of 40 CFR 423.

As we discussed, suggested alternatives #2 and #3 outlined on page 2 of your 11/4/86 letter to EPD are not in accord with the requirements of 40 CFR 423. However, as possible results of any F.D.F. variance process, they do represent sound technical approaches to establishing BAT limitations.

B. SPECIAL REQUIREMENTS

1. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.
2. Any metal cleaning wastes generated will be contained for further treatment or disposal in a manner to permit compliance at time of discharge with requirements listed below. This applies to any preoperational chemical cleaning of metal process equipment also. The treatment and disposal procedures shall be discussed in the bi-annual flow characterization study.
3. The quantity of pollutants discharged in metal cleaning waste shall not exceed the quantity determined by multiplying the flow of metal cleaning wastes times the concentrations listed below. All effluent characteristics shall be monitored 1/week by grab sampling when a discharge is occurring.

<u>Effluent Characteristic</u>	<u>Discharge Limitation (mg/l)</u>	
	<u>Daily Average</u>	<u>Daily Maximum</u>
Total Suspended Solids	30	100
Oil and Grease	15	20
Copper	1.0	1.0
Iron	1.0	1.0

4. Neither free available chlorine (FAC) nor total residual chlorine (TRC) may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Director that the units in a particular location cannot operate at or below this level of chlorination. The permittee has demonstrated the need to continuously chlorinate the service water system to control asiatic clams. The service water will be chlorinated periodically from April through October, five days per month for 24 hours per day at an initial level of 1.0 mg/l FAC. This chlorination practice will result occasionally in the discharge of FAC or TRC from each cooling tower simultaneously and for more than 2 hours per day. The permittee must reduce the chlorine discharge if possible and shall perform a study to determine the minimum practicable chlorine levels and periods of continuous chlorination for the service water system to adequately control asiatic clams. A plan of study must be submitted to the EPD within 90 days after the effective date of the permit and implemented upon approval.

OK

OK

OK

OK

Can we be involved  
Due to need for  
info. for  
similar sites?

will it  
include reporting  
requirements??

**DRAFT**

Summary of NPDES Permit Rationale

Name Georgia Power Company - Plant Scherer NPDES No. GA0035564  
 Location Monroe County  
 Minor Discharge ☒ Date 6/19/86 Prepared by J.C. McPhee  
 Draft permit is first issuance ☐ reissuance with no modifications ☐  
 from previous permit ☐ modification of existing permit ☒  
 Discharge is industrial ☒ municipal ☐ privately owned (domestic  
 wastewater only) ☐ If industrial, point source category is 423  
Steam Electric Power Generating  
 subcategory is ☐ production level is 3,272 megawatts  
 Facility located on stream segment that is and the basis for derivation of  
 limitation is:

Stream water quality limited ☐  
 Based on water quality model ☐  
 Based on instream calculation at 7 day, 10 year low flow ☐  
 Stream effluent limited ☒  
 Based on promulgated guidelines ☒  
 Based on plant's demonstrated performance ☐  
 Based on demonstrated technology ☐

Discussion:

This permit is prepared in response to USEPA Region  
 IV's January 15, 1986 letter and a revised partial  
 form 2C submitted by Georgia Power on May 5,  
 1986. Units 3 and 4 are included as  
 existing sources. See also EPA's 7/29/86 letter and our 9/9/86  
 01 I-Pond Final Discharge and 010 I-Pond  
 Bottom Drain to Berry Creek. A daily max. TSS  
 of 90 mg/l should be adequate to protect state  
 waters and begin a track record at this outfall



01  $\frac{1}{2}$  Old cont. - a pH of 6.0 - 9.0 is required by 40CFR423.

01A Cooling Tower Blowdown for Units 1, 2, 3, 4. There are 40CFR423 regulated waste streams.

All requirements are derived directly from the Federal regulations. Priority pollutant notification will be required every two years in the flow characterization study.

01B Oak Transport Water (includes 02H, Wastewater Basin, Low Volume Waste). On May 5, 1986,

Georgia Power submitted information which enables an oak pond volume test calculation per the August 22, 1985 USEPA guidance memo. The calculation (attached) indicates that dilution does not occur and the 40CFR423 limitations can be applied without modification.

02I Settling Pond Emergency Overflow to Lake Juliette. This may be considered a discharge of oak transport water to a water of the U.S. The applicable limits for TSS, Oil and Grease, and pH are taken from 40CFR423.

02K Wastewater Basin Emergency Overflow. This may be considered a discharge of low volume wastewater to Lake Juliette, a water of the U.S.

02K cont. Therefore, TSS,  $0\frac{1}{2}\%$ , and pH limits are taken from 40 CFR 423. The basin serves Units 1 and 2.

02L Wastewater Basin Emergency Overflow To Lake Gullette (Low Volume Wastewater). The basin serves Units 3 and 4. Permit requirements are identical to 02K above.

03 Service Water Final Discharge To Lake

Gullette. The discharge is analogous to once-through, non-contact cooling water. The pollutants which are to be regulated are Temperature and Odor. The discharge consists of miscellaneous

cooling water flow and pump bleedoff, none of which pass through the main condenser. The waste stream is not covered in 40 CFR 423, so

effluent limits are based on BPT. Stringent PDES expects no significant rise in Temperature and

will verify by measurements in the lake.

This assumption is consistent with our experience with other once-through, non-contact, non-condenser cooling water. Therefore, periodic monitoring without limit should be adequate. After sufficient monitoring data are obtained, we may add limits if W.Q. standards are



03 cont. being initiated. Regarding chlorine,  
a TRC limit of 0.5 mg/l will be imposed.  
<sup>monitoring</sup> ~~document existing~~ <sup>monitoring</sup> ~~document existing~~ <sup>monitoring</sup> ~~document existing~~  
and discourage over-use. ~~Additional Reductions~~  
in TRC discharge will be required after EPA  
has documented TRC toxicity in the receiving  
water. The approach is consistent with our  
developing state-wide strategy for controlling  
and abating TRC toxicity.

04 and 05 Unit 1 and Unit 2 Cooling Tower  
Basin Overflows to Lake Juliette, including Basin  
Cleaning Water: Cooling Tower basins overflows are  
analogous to cooling tower blowdowns, so limits  
for FAC, TRC, chrome and nickel are imposed from  
40 CFR 423. Basin cleaning water are low volume  
wastes, so the 423 limits for TSS and O<sub>2</sub>G are  
used. These waste stream discharge directly to  
a water of the U.S., requiring pH limitation per  
part 423. A compliance inspection revealed that  
stop log leakage is insignificant. No monitoring is  
required and periodic review in the bi-annual  
flow check. Study is adequate to control leakage.  
Priority pollutant certification is allowed as in the  
provisions of OIA Cooling Tower Blowdown.



06 and 07 Units 3 and 4 Cooling Tower Basin  
Overflow/Basin Cleaning Waste to Retention Pond  
(I-Pond). Limitations for these waste streams are  
written as 04 and 05, except that "I-Pond"  
is not a water of the U.S. Therefore, pH  
monitoring is not required. The pH of the  
final discharge is limited at 01/010, the  
"I-Pond" outfalls.

Special Requirements See Part III. B.

1. PCB's: The statement from 423 is repeated.  
2. and 3. Metal Cleaning Waste: The BAT/BAT

provisions are incorporated from 423. These waste  
are not discharged to a U.S. water. Therefore,  
pH is not limited except at the final plant  
discharge.

4. FAC and TRC time and simultaneous discharge  
provisions: Part 423 is cited. <sup>the plant</sup> ~~of these~~ <sup>operated at or below these chlorine levels</sup> ~~cannot be met~~, the company must

or demonstrate within 90 days. Further, the  
company must develop a new format for reporting  
Time of FAC and TRC discharge.

5. Combined discharge: Part 423 is cited re  
mass-based limits.

6. Modifications: Expands Part II. 8.4. to specify that the company may request changes to limits. 7. Flow characterization study: Studies are to be done every two years.

8. Wastewater treatment plants: All STP's (02A, 02B, 02C, 02D) are to be operated properly. These plants do not discharge directly to a U.S. water.

9. Water treatment chemicals other than chlorine: These are to be maintained every two years. 10. Periodic reports to be included with flow charac. studies:

a) Stop log leakage.  
b) metal cleaning  
c) flows

d) water treatment chemicals  
e) C.T. shutdown certification

6/19/80 TEH

Plant Review  
 Oak Transport Water Effluent Limitations  
 Outfall 016

Available Information

02H Raw Volume Water	8200 gpm	=	11.81 MGD
02 Oak Transport Water	36,090 gpm (net)	=	51.97
02E Coal Pile Runoff	2,500 gpm	=	3.6
02C, D STP's	34 gpm	=	0
			<u>67.38 MGD</u>

Oak Pond Area = Total Runoff Area = 490 acres

10 year 24-hour Storm (10Y24H) = 5.8 inches  
 Annual rainfall = 44.77 inches

Calculations

Runoff from 10Y24H storm at a runoff coefficient of 1.0  
 =  $(490 \text{ acres})(5.8 \text{ inches})(1 \text{ ft}/12 \text{ in})(43560 \text{ ft}^2/\text{acre})(7.48 \text{ gal}/\text{ft}^3)$   
 = 77.2 MG  
 Total oak pond volume for use of alternate approach  
 = 144.6 MG  
 = 444 A-FT.



# Case I

$$\begin{aligned}
 & \text{Aq pond water surface area (acres)} = 490 \\
 & \text{Average water depth when full} = 32.65 \text{ ft} \\
 & \text{Subtract 2 mils} \times 160 \text{ A-ft/year} \times 4 \text{ years} \div 490 \text{ acres} = 2.61 \text{ ft} \\
 & \text{Average water depth available} = 30.0 \text{ ft} \\
 & \text{Available volume} = 14,700 \text{ A-ft}
 \end{aligned}$$

Since the pond volume exceeds the necessary storage volume of 444 A-ft, required to use the alternate approach, only the available flow need to be used in calculating effluent limitations.

Source	Flow (MGD)	Daily Average Limitations (mg/l)	Daily Maximum Limitations (mg/l)
Flow	11.81	30	100
Not Volume Water	51.97	30	100
Flow Weighted Conc.	(63.78)	15	100
Effluent Limitations for 018	30	15	20

Georgia Department of Natural Resources

205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334

J. Leonard Ledbetter, Commissioner  
Harold F. Rehers, Assistant Director  
Environmental Protection Division

November 25, 1986

Mr. Roosevelt Childress, Acting Chief  
South Area Permits Unit  
Facilities Performance Branch  
U. S. Environmental Protection Agency  
345 Courtland Street  
Atlanta, Georgia 30365

Dear Mr. Childress:

In reply to your October 29 letter, the State of Georgia has not approved any of the Section 301(g) requests listed in your letter and does not expect to do so. No further action is needed at this time.

Sincerely,

*Nolton G. Johnson*  
Nolton G. Johnson, P.E.  
Assistant Chief  
Water Protection Branch

NGJ:mck

Tom Hykins  
Ga

May 5  
Chlorine for car April through Oct  
continuous 1 ppm all plant service with systems  
Simultaneous discharge of continuous

~~10/2/24~~ 10/6/24 About 16000 Capable 1901  
# 1 ppm. FTC of raw  
had 4 changes [ 5 days/week for  
24 hrs/day]

Assuming 3000  
5 1/2 months

{ No Chlorination of condenser during certain  
period.

Will Segregate Chlorine during m-  
carbolic periods.